CLAIMS

1.   A power generation control system comprising:

a fuel cell for generating power from fuel gas and oxidant gas fed thereto;

a target power provider for providing a target power for the fuel cell;

5   a detector for detecting output power from the fuel cell, the detected output power including actual output voltage of the fuel cell; and

a controller comprising

a target current computing unit which calculates a target current from the target power based on a power-current characteristic obtained from an output characteristic of

10   the fuel cell, and

a command output power computing unit which calculates a command output power of the fuel cell based on the target current and the actual output voltage.

2.   The power generation control system according to claim 1, further comprising:

15   a gas control system for controlling pressure and flow rate of the respective fuel gas and oxidant gas, wherein

the controller further comprises

a target gas operation point computing unit which calculates a target gas operation point of the fuel gas and the oxidant gas from the target current based on gas

20   operation point characteristic which provides pressure and flow rate of the respective fuel gas and oxidant gas for an output current of the fuel cell, and

an output characteristic learning unit which learns the output characteristic of the fuel cell based on the output power thereof detected by the detector, and corrects the output characteristic of the fuel cell based on the learned output characteristic thereof,

25   and wherein

the gas control system controls the pressure and flow rate of the respective fuel gas and oxidant gas based on the target gas operation point calculated by the target gas operation point computing unit, and wherein

the target current computing unit creates the power-current characteristic based

30   on the output characteristic of the fuel cell corrected by the output characteristic

learning unit.

3.   The power generation control system according to claim 1, further comprising:

a gas control system for controlling pressure and flow rate of the respective

5   fuel gas and oxidant gas, wherein

the controller further comprises

a target gas operation point computing unit which calculates a target gas

operation point of the fuel gas and the oxidant gas from the target current based on gas

operation point characteristic which provides pressure and flow rate of the respective

10   fuel gas and oxidant gas for an output current of the fuel cell, and

an output characteristic learning unit which learns the output characteristic of

the fuel cell based on the output power thereof detected by the detector, and corrects the

output characteristic of the fuel cell based on the learned output characteristic thereof,

and wherein

15   the gas control system controls the pressure and flow rate of the respective fuel

gas and oxidant gas based on the target gas operation point calculated by the target gas

operation point computing unit, and wherein

the target gas operation point computing unit creates the gas operation point

characteristic based on the output characteristic of the fuel cell corrected by the output

20   characteristic learning unit.

4.   The power generation control system according to claim 2, wherein

the output power detected by the detector includes actual output current of the

fuel cell, and wherein

25   the output characteristic learning unit learns the output characteristic of the fuel

cell based on the actual output current and the actual output voltage detected by the

detector.

5.   The power generation control system according to claim 4, wherein

30   the output characteristic learning unit collects actual output currents and actual

output voltages of the fuel cell detected by the detector to correct the output characteristic of the fuel cell.

6.   The power generation control system according to claim 4, wherein

the output characteristic learning unit learns the output characteristic of the fuel cell based on the actual output currents and the actual output voltages of the fuel cell detected by the detector during a predetermined period.

7.   The power generation control system according to claim 2, further comprising:

a thermometer for measureing an actual temperature of the fuel cell, wherein

the output characteristic learning unit has a plurality of pieces of output characteristic data for various temperatures of the fuel cell, and corrects the output characteristic based on the measured actual temperatures of the fuel cell.

8.   The power generation control system according to claim 2, wherein

the target power provider calculates target power by taking into account power consumption of an auxiliary equipment for power generation of the fuel cell, and

when the power-current characteristic of the target current computing unit or the gas operation point characteristic of the target gas operation point computing unit are corrected, current-auxiliary power consumption characteristic, which provide power consumption of the auxiliary equipment for an output current of the fuel cell, are corrected based on the output characteristic of the fuel cell corrected by the output characteristic learning unit.

9.   A method of controlling power generation of a fuel cell, comprising:

receiving target power for the fuel cell;

detecting an output power from the fuel cell, the detected output power including an actual output voltage;

calculating a target current from the target power based on output characteristic of the fuel cell; and

calculating a command output power for the fuel cell by multiplying the target current and the actual output voltage together.

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